

Open Data Consortium project

Model Data Distribution Policy

October, 2003

Bruce A. Joffe, AICP
ODC project organizer
GIS Consultants
1615 Broadway, Suite 415
Oakland, CA 94612
(510) 238-9771

GIS.Consultants@joffes.com

Open Data Consortium project

MODEL GEOGRAPHIC DATA DISTRIBUTION POLICY

PURPOSE OF THIS DATA DISTRIBUTION POLICY	1
• Definitions	1
• Assumptions.....	2
• Support of GIS Operations through Capture of dGI Benefits	3
• Public Data Consortia	4
LEGAL AUTHORITY	5
DATA RECIPIENTS.....	6
DATA DISTRIBUTION METHODS	6
DATA DISTRIBUTION SERVICES AND FEES	7
• Distribution Services: copies, extraction and reformatting services; delivery ...	8
• Update Subscriptions	8
• Resale Royalty Fee	9
LICENSE AGREEMENT	9
• Control and Security of the Steward's Data	9
• Copyright	9
• Indemnify Demand for Data by Others	10
• Copyright Notice.....	10
• Disclaimer of Liability.....	10
• Disclaimer Notice	11
• Privacy and Security Restrictions	11
• Positive Identification	12
• Database Dictionary.....	12
• Metadata Maintenance.....	13
• Data Correction and Update	13
• Data Redistribution & Third Party License	14
• Derivative Data or Products.....	14
• Value-Added Services	15
APPENDIX XX	
DATABASE DICTIONARY.....	16
CONTENTS OF GIS DATABASES	16
CONTENTS OF GIS METADATA	16
DATA REPRODUCTION FEES.....	16
DATA UPDATE SUBSCRIPTION FEE FOR SPECIFIC DATA INCLUDED WITH EACH SPECIFIC LICENSE AGREEMENT	16
DATA DISTRIBUTION FORMAT	16
APPENDIX A	
OPEN DATA CONSORTIUM PROJECT ACTIVE PARTICIPANTS	17
OPEN DATA CONSORTIUM PROJECT SPONSORS	18
APPENDIX B	
DATA DISTRIBUTION POLICY ALTERNATIVES MATRIX	19

About the ODC project

The Open Data Consortium project exists to identify and promote the mutual geodata distribution policy interests shared by various levels of government, private sector, university, and non-profit data service providers. This private-public partnership effort was organized with the collaboration of the GeoData Alliance, a non-profit, inclusive coalition of geographic-interest alliances, and URISA, the international association of GIS professionals. The ODC project has been designated an "emergent initiative" of the GeoData Alliance, and as the "data access and distribution initiative" by URISA. Initial funding has been under contract from the USGS to the GeoData Alliance.

GeoData Alliance
www.GeoAll.net

URISA
www.URISA.org

About the Project Organizer

Bruce Joffe is founding Principal of GIS Consultants (in Oakland, CA), providing GIS planning and implementation management services to cities, counties, and utility companies for over 26 years. His practice includes organizational therapy and GIS public policy formulation. Recent GIS Consulting services include advising on public policy issues relating to GIS, including:

- The Open Data Consortium project
- Data Distribution Policy for Public Agencies
- Certification of GIS Professionals
- Responsibilities of GIS Professionals and Surveyors

Bruce recently served as President of the BAAMA chapter of URISA, and is a past Chair of California's Geographic Information Coordinating Committee. He was a member of the URISA Board of Directors, serving as Secretary. Mr. Joffe represented California on the FGDC Steering Committee. He chaired the second and seventh annual California GIS Conferences, in 1996 and 2001. Bruce is a member of the *Geospatial Solutions* magazine Editorial Advisory Board.

Mr. Joffe holds two Masters degrees, in City Planning and Architecture, from M.I.T., and a Bachelor of Architecture from the University of California at Berkeley. He is registered with the American Institute of Certified Planners (AICP). He has international planning experience, in Chile, Venezuela, Israel, and Thailand, and works on city simulation modeling games in his spare time.

GIS Consultants
1615 Broadway, Suite 415
Oakland, CA 94612
(510) 238-9771
GIS.Consultants@joffes.com

Open Data Consortium project

MODEL GEOGRAPHIC DATA DISTRIBUTION POLICY

Purpose of this Data Distribution Policy

The objective of this policy is to provide a general framework for the distribution of public-record geospatial data. It is a guideline, recommending policy for major data distribution issues, after consideration of a wide variety of alternatives.¹ This document is intended to help local governments when adopting a geodata distribution policy, or when revising one. Each agency will need to develop its own specific policy that takes into consideration the legal, political, and value propositions of its own jurisdiction. Adoption by local agencies would begin to build a body of "case examples" to fill in the remaining generalities.

This model policy document reflects the consensus of over sixty participants from city, county, state, and federal government agencies, along with participants from the university and private sectors.² The participants represented a wide variety of opinion and experience on the policy issues contained herein. This document is the consensus-based result of their deliberations.³

This model policy document reflects the participant's observations that most public agencies have the intention to make public record information easily available and accessible to public agencies, private organizations, and individuals, within the full extent that is required and allowed by law, and that is practical, secure and feasible.

This policy also recognizes the problems many agencies have in funding the operation and maintenance of their geodata stewardship. It encourages low-cost public access to data, while suggesting alternative methods of supporting GIS operations, thereby reducing the need of agencies to sell their data. For agencies that believe they must sell their data, the recommendations herein suggest methods which may impede public access less than many current practices.

- **Definitions**

For the purpose of clarity in this policy statement, or in subsequent data Licensing Agreements, the following terms are defined:

Steward The public agency responsible for the distribution of information used or collected by a public agency or government, that is deemed to be public record. In this case, <name of public agency>. The data Steward may also be

¹ A complete listing of all the data policy alternatives that were reviewed and analyzed by the ODC project participants is presented in Appendix B, "Data Distribution Alternatives Matrix"

² Appendix A lists the active participants of the Open Data Consortium project.

³ 24 telephone conferences were held over a five-month period, 67 people actively participated. Another 50 people received interim documentation for review and comment.

responsible for the collection, maintenance or update of an Agency's data. The Steward may or may not also be the data owner.

Data Owner The entity that holds the valid copyright for the subject data.

Data Custodian A synonym for data Steward.

Agency A synonym for "public agency," "government agency," "regional government," or "local government."

Geospatial Data The digital, geographic and location-based information, including related attribute records, data files, and metadata that are stored and maintained in the Data Owner's or the Steward's computer systems.

Steward's Data A synonym for geospatial data.

Geodata A synonym for geospatial data.

dGI digital Geographic Information, a synonym for geospatial data.

Metadata Information that describes geospatial data, such as the contact person in the data owner's agency, the contents of the dGI database, the data accuracy, projection, currency (date of capture), and format of the data.

GIS Geographic Information System, the collection of computers, software, databases, and data that enable geospatial data to be received, manipulated, displayed, and distributed.

Licensee Any recipient of the Steward's data that has agreed in good faith to the terms of the License Agreement, and is conducting data related activities accordingly.

- **Assumptions**

This data policy is based upon the following principles:

- 1 Public information is a necessary component of the democratic process and open government.
- 2 The value of geospatial data is realized through its usage.
- 3 Widespread distribution and use of public geodata benefits the data Steward's entire jurisdiction.
- 4 Public agencies increasingly store data electronically, and such digital data constitutes the public record.
- 5 In their roles as data custodians, public agencies have a responsibility to make data available both for citizen access, and to reduce duplication of effort among public agencies.
- 6 Public agencies need funding to develop, maintain, and distribute their data.

The unfettered distribution of the Steward's data provides several benefits to the Steward, as well as to the recipients of its data. Such benefits include:

- Reduced cost and effort in compiling needed data; reduction in redundant and duplicative data collection efforts
- Usage of a consistent base of information among coordinating agencies or decision makers
- Ability to update and maintain the Steward's information more currently and consistently
- Improvements in the region's economy, environment, and citizen's quality of life through activities that utilize the Steward's geospatial data.

Sharing data reduces the cost of data for all participants. Sharing data assures the data will be more comprehensive and consistent beyond that available from any one agency. Sharing data enables authorized participants to contribute updates and corrections to the common source of information, enabling the Steward's data to be maintained more efficiently.

The Steward may wish to provide its data for no charge, for minimal charge (the cost of reproduction), or for a fee based on the cost of data maintenance. This decision is the Steward's to make with its constituent Agencies. The recommendations herein seek to assure support for data maintenance and distribution with the least impediment to the public's data access, so as to realize the many benefits that arise from the public's use of public agency data.

- **Support of GIS Operations through Capture of dGI Benefits**

Some Stewards sell their agency's geospatial data in order to support its GIS operation. While this appears to be a valid approach, it has proven in many cases to actually diminish the benefits of the GIS investment, as well as reduce financial revenues. When the costs of data rise, fewer people can acquire and use it, resulting in less cumulative benefits.

The recommended approach is to consider the Steward's geodata as a strategic asset which benefits the Steward directly, and all of the Agency's citizens indirectly. The use of the Steward's data to promote economic development, or to deliver social or public services, improves the general well-being of the region. The value of such development and services is far greater than the direct cost of the data. By providing these geodata-based services, and channeling the revenues obtained from their benefits back into the GIS operation, it is possible to support an agency's GIS while providing affordable data access to the public.⁴

⁴ See a complete description of these findings, entitled "10 Ways to Support Your GIS Without Selling Data" at www.OpenDataConsortium.org click on "News/Links"

The more data that are easily available, the more benefits will be realized, and the more financial resources can accrue to the GIS operation. The following examples suggest ways in which the usage of the Steward's geodata can support the operation and maintenance of its GIS operations:

- Allocate a portion of the Agency's increased revenues that have come from increased economic activity and new economic development to GIS, the source of the information that stimulated the economic activity.
- Allocate a portion of the Agency's increased revenues that have come from analysis of under-taxed assessments, or from more accurate determination of facility locations for taxation purposes, to GIS, the source of the locational information and analysis.
- Allocate a portion of the Agency's increased savings that have come from coordinated management of public works facilities and infrastructure, to GIS, the source of the locational information and analysis.
- Allocate a portion of the Agency's increased savings that have come from deferred purchase of capital equipment or facilities due to geographic analysis of routes and service areas, to GIS, the source of the locational analysis.
- Allocate a portion of the funding from specific programmatic sources, such as Homeland Security emergency preparedness, to data collection and data maintenance services of GIS.
- Allocate support to GIS from specific taxes and fees, such as building or development permits or property transaction fees, that rely on the maintenance and update of accurate locational information.

Typically, the types of revenues and savings described above are received directly into an Agency's general fund. Changes to accounting procedures may be necessary to assure that a portion of these revenues and savings get identified and allocated to the maintenance and update of the Agency's geographic information. This data distribution policy recommends that appropriate accounting changes be implemented.

- **Public Data Consortia**

In an effort to reduce the costs of data collection and maintenance, and to avoid duplication of data activities, some public agencies have agreed to work together as a consortium in which they share data and the costs of maintaining that data. Within the consortium, their public data is "free" and accessible, yet, to outsiders, their public record data is made available only at a fairly high price.

While the reasons for, and benefits from, making the consortium's data available to the public are the same reasons that encourage an individual agency to distribute its data freely, data consortia contend with an additional impediment: the "free rider" problem. The distribution of the data consortium's benefits only to its members conserves that membership. If members thought they could get the data for free,

perhaps some would not join the consortium, thereby weakening the consortium's ability to provide the very benefits it seeks foster.

This model policy recommends four strategies to motivate data consortia to make their data more easily accessible to non-members.

- 1) Remember that creating or joining a cost-sharing and data-sharing consortium is more cost-effective than working individually, and that more members increase the benefit to all. Members benefit even if there are some free riders.
- 2) Recognize that the benefits from the wide distribution of data accrue back to the agencies whose geography is the subject of the data. Whether the users are local or remote, the activities that are based on such geodata usually benefit the subject jurisdiction.
- 3) Provide a "sunset date" for low-cost (or no-cost) distribution of the data, after say, 2 or 3 years. That way, consortium members retain the additional benefits of data currency while still enabling others to have affordable public access.
- 4) Enable non-members to acquire data by paying an update subscription fee (see Update Subscription section, below). This way, regular data users will still contribute to the ongoing operation of the consortium, while one-time data users will be able to acquire the data at an affordable cost.

Legal Authority

Each State's public record laws ordain the legal authority upon which local data distribution policy is based. The following example, taken from California's public records law applies to local governments in California. While the intent is generally similar in every state, each state's laws are different. The data Steward is advised to summarize pertinent sections of its own state's law where California's appears, below.

<name of public agency>'s data policy is governed by <your State's> State Public Records law. Please note, for example, the following sections from California's Government Code § 6250 *et. seq.*:

- § 6251 (d) – "Public records" includes any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics.
- § 6253 (b) – Except with respect to public records exempt from disclosure by express provisions of law, each state or local agency, upon a request for a copy of records that reasonably describes an identifiable record or records, shall make the records promptly available to any person upon payment of fees covering direct costs of duplication, or a statutory fee if applicable. Upon request, an exact copy shall be provided unless impracticable to do so.

§ 6253.9 (1) – The agency shall make the information available in any electronic format in which it holds the information.

(2) – Each agency shall provide a copy of an electronic record in the format requested if the requested format is one that has been used by the agency to create copies for its own use or for provision to other agencies. Direct costs of duplication shall include the costs associated with duplicating electronic records.

§ 6254 – Exemptions that shall not be construed to require disclosure of records. (Specific exemptions protecting individual privacy and community security are enumerated.)

Data Recipients

ODC project participants represented agencies with a wide variety of data policies, for a wide variety of classes of data recipients (see Appendix B). The consensus recommendation is to denote as few classes as possible. Three are presented here.

The Steward intends to make its geospatial data available to all interested parties who agree to the terms of its License Agreement. The Steward reserves the right to differentiate the type of data and data services, as well as the price and the priority for service response, to be provided to each of the following classes of data recipients:

- A Value Provider - Includes data sharing partners, cost sharing partners, emergency service providers, public agencies that offer services or data in return for using the Steward's data, or agencies whose mission is integral to the Steward's mission. This class is seen as providing value to the Steward in lieu of a data distribution fee.
- B Data Redistributor - Private companies that re-sell the Steward's data, and public agencies that redistribute the Steward's data. The reason for this distinction is to maintain the option to recover a royalty payment back to the custodian from the resale of its data. (See the "Data Redistribution" section.) Public agencies not interested in such resale recovery may omit this class.
- C Data User - All other recipients, including other public agencies, private agencies and private companies that do not redistribute data, non-governmental and non-profit organizations, educational and research institutions, newsmedia, students, and private citizens. This class may obtain the Steward's data for a fee equal to the cost of distribution, or less.

Data Distribution Methods

The Steward intends to make its geospatial data available through one or more of the following methods, depending on the availability and capability of its staff, the availability and capability of licensed data re-distributors, and the availability and capability of such internet-based applications as it deems practical and affordable.

Certain distribution methods are available only for data owned by the Steward, or data that the Owner has given the Steward permission to redistribute (identified below as "Steward-Owned").

Certain data features, themes and related attributes that are determined to be confidential for reasons of Agency security, or protection of individual privacy, are excluded from the following distribution methods.⁵ The following methods pertain to "public" data availability, subject to the other restrictions described under the "License Agreement" section. (The Data Steward may list one or more such methods in its policy document.)

- a. Copies of the GIS databases in the GIS format used by the Steward (or translated into a specified standard format), to be provided in such electronic output media as the Steward is capable of producing (for example, CD, tape or disk). [Steward-Owned]
- b. Data distribution through the services of licensed data distributors. The Steward encourages private organizations and other public agencies to obtain copies of its geodata for the purpose of providing copies or custom service products to interested parties who agree to the terms of the Steward's License Agreement. [Steward-Owned]
- c. Copies of the GIS databases in the GIS format used by the Steward (or translated into a specified standard format), to be provided as downloadable files through the internet. [Steward-Owned]
- d. Read and Write/Update access to authorized data partners, distributed via methods to be determined on a case-by-case basis. [Steward-Owned]
- e. Special requests for information, analysis, or data products which are subsets of the Steward's dGI databases (e.g., custom data services, including data extraction, translation, reformat, or recombination).
- f. Read-only access to the GIS databases (via the internet) through special application programs commissioned by the Steward. These programs will allow selective query and display of the data, but not downloading or copying of the database.

Data Distribution Services and Fees

While the Agency's GIS department and geodata stewardship need to be as self-supporting as possible, the need is recognized for reducing the impediments to public data accessibly as much as possible. Further, more financial and quality-of-life benefits are likely to accrue to the Agency, and the citizens within its

⁵ A complete specification of the contents of the Steward's data, with such designations of ownership, and privacy or security restrictions, appears in Appendix XX, Data Dictionary.

jurisdiction, through the widespread use of its geodata, rather than from the sale of its data.

Accordingly, the Steward is advised that charges to the public for its data be limited to direct distribution costs covering actual staff time and materials for duplication, special data services, and delivery.

Optional service fees are suggested for recipients who would like to insure timely data update, and for recipients who intend to resell or redistribute the Steward's data. The purpose of these fees is to support the Steward's services while encouraging Licensees to distribute the Steward's data. The more Licensees there are to distribute the Steward's data, the more benefits will accrue to the Agency and its citizens from the use of that data.

With the exception of the conditions outlined in the Data Redistribution section, data acquired by the Licensee may be used by any of its employees or its agents in performance of their official duties.

- **Distribution Services: copies, extraction and reformatting services; delivery**

Requests for data products or custom data services will be provided by the Steward according to staff availability. Such requests will be handled as one-time events, on a first-come-first-serve basis. A data distribution fee will be charged for this service to cover the cost of duplication. The fee may include:

- Staff time expended to fulfill the data request, to be billed at fully-loaded rate that includes salary and overhead costs. Fulfillment costs may include the time expended to consult with the requester in order to specify, clarify, and understand the data request.
- Cost of any media or materials consumed in reproducing the data
- Other ancillary direct costs, such as shipping, handling, or renting special equipment to fulfill the request.

- **Update Subscriptions**

For the consideration of an annual subscription fee, regular updates of the Steward's data will be sent to subscribers at the time intervals specified (monthly, semi-annual, annual), for all datasets specified in the Licensing Agreement that have been updated or changed since the previous delivery. At the Steward's discretion, the data updates will be delivered as a separate dataset, or as a revised copy of the entire GIS database. Licensee subscribers in good standing do not have to make a special request for data update deliveries.

The Update Subscription fee is based on the datasets requested, and the area of data coverage requested, as delineated in Appendix XX, "Data Dictionary."

The Fee for Distribution Services will also be charged for the Steward's direct costs.

- **Resale Royalty Fee**

For the consideration of a resale royalty, the Steward will grant the Licensee the right to sell or redistribute its data to third parties, according to the terms of the License Agreement. The terms include prohibition of the third party data customer from further distribution or sales of the Steward's data. The resale royalty fee may be based on (a) a percentage of the data distributor's gross revenue from the resale of the Steward's data, or (b) a transaction fee based on the number of sales to third parties, or (c) it may be a single fixed fee.

Payment should be due quarterly on all royalties due and collected during the previous quarter, within 45 days of the end of the quarter. The Licensee shall submit to certified audits at the request of the Steward.

The Fee for Distribution Services will also be charged for the Steward's direct costs.

License Agreement

The following contractual conditions should be considered for both the Agency's data distribution policy and for the subsequent licensing agreement used to implement that policy.

- **Control and Security of the Steward's Data**

For reasons of public safety and security, and to protect the Steward's intellectual property rights, the Steward requires that all persons or organizations that obtain a copy of all or part of the Steward's data sign and agree to the terms of the Steward's License Agreement. A License Agreement is not necessary for viewing the Steward's data through the public internet, but a license shall be required to download data through the public internet.

Third parties that receive the Steward's data through a Licensee shall agree to the same licensing terms as stated herein, and shall sign a similar License Agreement with the Licensee. (See the Data Redistribution section.)

- **Copyright**

The public agency, Data Owner, or its Steward, asserts its right to regulate the distribution of its data through its claim of ownership as a copyright. In most cases, the data Owner and data Steward are the same entity. In some cases, however, some data files (or themes) may not be owned by the Steward. The data policy and data license documents should include the following assertion regarding data that is owned by the data Owner and managed on behalf of the Owner by the data Steward:

Except for the data files listed below, the data Owner asserts ownership of its data and all its portions. All title, ownership, and intellectual property rights which may exist or be created with the geospatial data shall remain with the Owner.

The arrangement of facts of the geodata, the organizational structure of the GIS databases, the coding of the GIS databases, the format of the GIS databases and the graphic design of its maps are the property of data Owner, as registered and protected by U.S. copyright statutes and treaties.

Listing of data files that are not owned by the data Steward:
(List, as necessary.)

- **Indemnify Demand for Data by Others**

If a demand is made to the Steward, or its Licensees, for data which is owned, provided by, or the responsibility of another party, then the Steward shall refer the requester to the data Owner, and shall notify the Owner of the referral. The Steward shall respond as directed by the data Owner, providing that the Owner agrees to defend, hold harmless and indemnify the Steward's actions.

- **Copyright Notice**

All publication, including via the internet, using any of the Steward's data for release to the public or to others outside the Licensee's organization must include the following notice:

"Copyright, 2003,* <name of Owner or Steward>"

All publications, including via the internet, using geographic information derived from the Steward's data and identifiable therefrom, must include the following notice:

"Derived from data that is Copyright, 2003,* <name of Owner or Steward>"

- **Disclaimer of Liability**

The Steward's geospatial data has been compiled and is being used by the Steward for the express purposes of fulfilling its mandated public duties. The Steward claims all privileges and immunities afforded under the law.

The Licensee accepts the dGI "as is", with no guarantee or warranty of accuracy, currency, completeness, or fitness for any use. The Licensee agrees to accept any

* or, current year

and all data from the Steward on an "as is" basis. No oral or written information or advice given by the Steward shall create a warranty.

While all due efforts will be made to assure that the data conforms to specifications of accuracy and completeness, neither party will make demands on the other if errors or omissions are found. The Licensee waives any and all responsibility of the Steward, explicit or implied, for any damage or liability caused through the use of this data in any way. The Licensee agrees to defend and hold the Steward harmless for any damages of any kind which may be caused by any errors or omissions in the data.

The Steward shall not be liable for any occurrence or activity relating to the dGI, including: lost profits, the fitness of the dGI for a particular purpose, the installation of the dGI, or the results obtained from use of the dGI.

This disclaimer shall survive the termination of the License Agreement.

- **Disclaimer Notice**

The Licensee agrees to display the following note on printed maps, digital web pages, or other reproductions utilizing the geospatial data:

"This is not a survey product. The information is derived from the <name of Agency> GIS Databases. The Steward does not assume any liability for damages arising from errors, omissions, or use of this information. Users of this data are advised to be aware of the locational accuracy, data collection dates, compilation methods, and cartographic format. Users are advised to use this data appropriately."

This disclaimer shall apply to any authorized or unauthorized transfer of all or parts of the dGI.

- **Privacy and Security Restrictions**

Data records, or specific attributes of data records, deemed to be restricted for reasons of privacy protection by the State's public records law, shall not be distributed with the Steward's data. The Steward and its licensees will comply with such restrictions in good faith, and shall provide information regarding appeal of its decisions to any data requester who challenges its decisions.

Some data records or attributes may be provided to certain recipients but not to others, according to restrictions concerning public safety or environmental protection, as defined in the state public records law, orders from the Attorney General, or other legal authorities. The Steward and its licensees will comply with such restrictions in good faith, and shall provide information regarding appeal of its decisions to any data requester who challenges its decisions.

The Steward should list its data resources in the form of a data dictionary (see below) with the restricted data elements designated as either "public" (no restrictions), "private" (restrictions to protect individual privacy), or "confidential" (restricted for reasons of community security).

Data that is restricted as "confidential" may be made available to authorized Emergency Services or Security agencies, with explicit enumeration of authorized users and types of uses permitted. Such sharing among public agencies shall not be interpreted as putting the Agency's data into the public domain.

- **Positive Identification**

In consideration of the security needs of the community, applicants for a license to use the Steward's data, or third party recipients of a licensed redistributor, shall be required to provide positive identification of themselves to the Steward, or to the licensed redistributor. Such identification shall be presented in person, via notarized certification, or through such internet-based mechanisms as are deemed secure and verifiable by the Steward. Licensed redistributors shall regularly convey the identity of their customers to the Steward.

The intent of this section is to institute some modicum of responsibility regarding the identity of the data recipients. It is not intended to limit data because of the recipient's identity. The issue of restricting data due to security considerations is currently being studied by the FGDC Homeland Security Working Group, who are considering the balance between effective data security and ease of access for all the many legitimate public uses of the data. The longevity of a terrorist threat vs. the longevity of the data, and the political perception of data husbandry are additional factors being weighed.⁶

- **Database Dictionary**

In order to facilitate the exchange or translation of data among different GIS system formats, the Steward shall maintain a current database dictionary describing the contents and structure of its dGI databases. This document may be used both for internal management of the Steward's data resources and to inform data requesters and data Licensees so that they may use the Steward's data effectively.

Database Dictionary contents should include, but not be limited to, themes, layers, and features of mapped elements, and their corresponding key-linking and descriptive attributes. Geographic information should include the spheroid, datum, and epoch of the map projection for themes or layers. The dictionary should also include tables that diagram the contents of data records, the linkages between

⁶ For more information on the working group, see www.fgdc.gov/fgdc/homeland/index.html.

record types, and the linkages between related databases that store information pertaining to the mapped features.

Some GIS databases automatically embed suitable descriptive information (metadata) into their data files so as to enable other GIS systems to read and translate the data. Such capabilities should be employed whenever practical.

It is recommended that the Steward utilize database standards in structuring and identifying its database contents whenever practical and feasible. Such standards include those published by the Federal Geographic Data Committee (such as the Spatial Data Transfer Standard), the Open GIS Consortium, and the Department of Defense (such as the Spatial Data Standard for Facilities, Infrastructure and the Environment, formerly the Tri-Services Spatial Data Standard).⁷

- **Metadata Maintenance**

The Steward recognizes and endorses the tenants of the National Spatial Data Infrastructure (NSDI), as promulgated by the U.S. Federal Geographic Data Committee.⁸ It is the Steward's intent to compile and maintain metadata describing its geospatial data in a format compatible with NSDI standards. The Steward's metadata should be made available through a Node in the network of NSDI metadata databases.⁹ At a minimum, metadata describing mapped themes and features should inform the user of its contents, locational accuracy, source, date of observation (currency), compilation lineage, and owner (if different from the Steward).

The Steward will update and record any changes to metadata pertaining to data updates or additions to the data, for which it is responsible.

Licensees of the Steward's data shall update and record any changes to metadata pertaining to data updates or additions to the data for which they are responsible. This metadata shall be made available to the Steward in a format compatible with the Steward's metadata catalog database.

- **Data Correction and Update**

If users of the Steward's dGI detect errors in the data, they shall inform the Steward of such errors in a format compatible with the Steward's data system.

⁷ For example, see http://www.geo-one-stop.gov/docs/GOS2_3Guidance1.1.22.03.html , one example of a brief database dictionary and metadata specification.

⁸ For information on NSDI, see <http://nsdi.usgs.gov/nsdi/> or <http://www.fgdc.gov>
The FGDC Metadata Standard may be downloaded from <ftp://fgdc.er.usgs.gov/fgdc/metadata>

⁹ One example of a suitable NSDI metadata catalog note is the California Metadata Catalog at <http://gis.ca.gov/catalog>

Users of the Steward's dGI that correct errors in the data, or that update the data with more current information, shall make these modifications available to the Steward. These data updates, additions, revisions, or corrections shall be provided in a format compatible with the format from which the data were received from the Steward.

Licensees of the Steward's dGI that create or modify additional themes, layers, features or data elements based on, or in reference to the Steward's data, shall make these additions available to the Steward, provided they are not the exclusive, proprietary interest of the Licensee. These data additions shall be provided in a format compatible with the Steward's data format.

The Licensee assesses these exchanges of data to be of equal value to both parties.

- **Data Redistribution & Third Party License**

Recipients of the Steward's data (Licensees) may not redistribute or re-sell the Steward's data to third parties unless they notify the Steward they intend to do so and agree to the relevant terms of the License Agreement, specifically, payment of a resale royalty fee, and the requiring of third party recipients to sign a similar License Agreement protecting the rights of the Steward.

Licensees that sell or distribute the Steward's data to third parties shall obtain their agreement to the same licensing terms as are stated herein. Third parties shall sign a similar License Agreement with the Licensee. Third parties shall not be permitted to redistribute or resell the data unless they sign a License Agreement with the Steward.

- **Derivative Data or Products**

"Derivative data or products" shall mean all works created by the Licensee which incorporate all or part of the Steward's data, including, but not limited to, a revision, modification, translation, abridgement, condensation, expansion, collection, compilation, or any other form of, or modification to, the Steward's data.

The Steward retains all rights pertaining to its data, particularly those regarding its redistribution or resale. So long as its data remains an identifiable and extractable subset of the Licensee's data or products, such data or products will be considered "derivative" of the Steward's data. [For example, re-printing the Steward's basemaps in a more convenient size, and display format.]

Any portion of the geodata or its derivative products that are modified or merged into another computer file by the Licensee, so as to form a separate entity the original contents of which are unidentifiable and extractable, shall be considered a separate product, free from the provisions of the License Agreement, so long as it is in no way associated with the Steward or Owner. [For example, a hazardous

materials storage site suitability map, comprised of data from many agencies, that has been overlaid, merged, and reclassified. Non-derivative products would incorporate the Steward's mapped features with mapped features and descriptive attributes from other sources in such a way that the original data themes or layers are indistinguishable.]

- **Value-Added Services**

Licensees are permitted to create application programs that query and analyze the Steward's data and produce specific products therefrom. These are considered to be value-added services, not subject to the Steward's rights regarding data redistribution. [For example, a map of movie star locations, or, an on-line guide to restaurants.]

APPENDIX XX, DATABASE DICTIONARY

Contents of GIS Databases

For each data theme/layer/feature, indicate its contents, attributes, geographic characteristics, and distribution status (e.g., "public," "private," or "confidential")

- GIS-based map themes/layers/features
- GIS-based attribute information stored in the GIS-based database
- Data records stored in external databases linked to the GIS map features
- Scanned documents linked to the GIS map features
- Privately-owned data (e.g., satellite imagery or digital orthophotos)
- Other themes/layers developed/owned by non-Steward agencies

Contents of GIS Metadata

For each data theme/layer/feature, include, at a minimum:

- Locational accuracy
- Projection, spheroid, datum, epoch
- Source of data
- Date of observation
- Compilation lineage
- Data owner (if different from Steward)

Data Reproduction Fees

- List the Steward's staff hourly rates, fully loaded with salary plus overhead
- Listing of fixed costs for materials

Data Update Subscription Fee for Specific Data Included with Each Specific License Agreement

- List specific data themes/features, and the area of coverage

Data Distribution Format

- Steward's native format
- Steward's web-serving format
- Other standard digital formats possible, on a cost of time and materials basis (for example, .shp or .dxf)

APPENDIX A

OPEN DATA CONSORTIUM project ACTIVE PARTICIPANTS

Malcolm Adkins	IES Geospatial / Kyalami
Bob Amos	City of Bakersfield
John Anderson	Los Angeles County Department of Public Works
Todd Bacastow	Pennsylvania State University, GeoData Alliance
Rob Ball	Kern County Council of Governments
Wayne Bannister	bd Spatial
Bob Basques	City of St. Paul, MN
Greg Bazhaw	Santa Clara County
Tony Boehm	Natrona County, WY, GIS Dept.
Dick Bolen	Metro Data Resource Center, OR
Carey Boukai	GIS consultant
Thomas Browne	Los Angeles County Department of Public Works
Diana Carolan	Nevada County
Joe Concannon	Sacramento Area Council of Governments
Mary Cook-Hurley	AirPhoto USA
Kathy Covert	Federal Geographic Data Committee
Susan Cromwell	Arkansas State Land Information Board, Chair
Tony de la Sota	City of Burbank
Carl Drummond	Monterey County
Lily Dryden	City & County of San Francisco Public Utilities Commission
John Ellison	California Resources Agency
Dave Etter	BASIC - Basic & Applied Spatial Information Consortium
Scott Fabbro	City of Glendale
David Gadish	California State University Los Angeles
Jim Girvan	Somerset County, NJ, MIS Division
Craig Gooch	Psomas & Associates
Nate Greenberg	Talon Associates
Bruce Harrison	New Jersey Office of Information Technology
Bruce Joffe	GIS Consultants
Angela Johnson	URS Corporation
Jeff Johnson	City and County of San Francisco
Bill Kaiser	U.S. Geological Survey
Mike Kemp	Mecklenburg County Land Use & Environmental Services
Dennis Klein	Boundary Solutions, Inc.
Roger Kunkel	California Resources Agency
Dale Lutz	Safe Software
Jim Manary	Oregon Department of Revenue
Dave Matson	City of Palo Alto
Ron Matzner	TIE, Inc.
Kim McDonough	Metropolitan Planning Commission
Andrew Michael	Bay Area Council
Pablo Monzon	GIS Planning
Tony Morales	Boeing Commercial Airplane Group

Rob Mott	Intergraph Mapping and Geospatial Solutions
Zorica Nedovic-Budic	University of Illinois
Mark O'Connor	Intergraph Mapping and Geospatial Solutions
Carole Ostergren	U.S. Geological Survey
Craig Parada	City of San Jose
Anne Payne	Wake County, NC, Geographic Information Services
Carl Pearsall	Huntsville-Madison County, AL, 911 Center
Reid Penland	Alameda County
Ron Plaster	Sanborn Maps
Dawn Robbins	Ventura County Water Resources & Engineering Dept.
Suparna Robertson	City of San Leandro
Ginger Ryba	San Bernardino Associated Governments (SANBAG)
Erich Seamon	City and County of San Francisco
Bill Shook	Geo Information Services JV
Cy Smith	Oregon GIS Coordinator
Emilio Solano	Los Angeles County Assessor Office
Mark Stoakes	Safe Software
Priya Tallam	Santa Clara County
Greg Tilley	VARGIS, LLC
Craig Trumbull	Tahoe City Public Utilities District
Paul Van Zuyle	City of Thousand Oaks
Barry Waite	City of Carson
Naomi Wexler	Tele Atlas North America, Inc.
George White	Policy Innovation Works

OPEN DATA CONSORTIUM project SPONSORS

USGS (www.usgs.gov)

GeoData Alliance (www.geoall.net)

Directions Magazine - GISbid.com (www.directionsmag.com)

Digital Map Products (www.digmap.com)

ESRI (www.esri.com)

Malcolm Adkins, IES Geospatial / Kyalami (www.iesgeospatial.com)

Metropolis New Media (www.metropolisnewmedia.com)

Safe Software (www.safe.com)

URISA (www.urisa.org)

The Open Data Consortium project was organized and managed by
Bruce Joffe

GIS Consultants, Oakland, CA

510-238-9771

GIS.Consultants@joffes.com

www.OpenDataConsortium.org

APPENDIX B

DATA DISTRIBUTION POLICY ALTERNATIVES MATRIX

All the many data policy alternatives that were discussed during the five-month deliberations of the ODC participants have been captured in the following matrix that looks at each issue, its alternatives, the policy objective that each alternative promotes, and an evaluation of its impacts.

The Matrix is organized into four sections, designed to categorize the many relevant issues into groupings suitable for sub-committees of the participants to address separately.

- * Data Ownership
- * Public Access
- * Funding Geodata Maintenance
- * Data Distribution and Stewardship

Obviously, there is a lot of overlap of influence among these issue categories, which was reflected in the 24 discussion teleconferences held during the formulation of this model policy document.

Special thanks goes to Jim Girvan, Somerset County, NJ, for analyzing and reformatting the Public Access matrix into a second, perhaps more understandable, format.

DATA DISTRIBUTION POLICY ISSUES ALTERNATIVES

a summary review prepared for the

Open Data Consortium project

by Bruce Joffe

Assumptions

Public agencies want to distribute their data widely

Wide spread use of public geodata benefits the source agency jurisdiction

The value of GIS data is realized through its usage

Questions

Should public data be treated like a commodity?

Value of data as a commodity should benefit source agency

- + Attempts to recoup cost of investment
- Impedes public watchfulness over government decisionmaking
- Impedes cooperation among government agencies
- ? Places public agency in private sector role
- + Investment is paid off through increased economic activity
- + Enables public unfettered access
- + Encourages third parties to distribute data and services
- No direct, accountable flow of revenue stream to GIS Dept.
- Some transportation systems run as "fee for service"

Should public data be treated like public roads?

Use of infrastructure (free access) benefits entire community

Principles

Independent 3rd parties should be able to analyze government decisions through access to or download of governmental databases.

GIS should be funded by revenues that result from the benefits of using GIS.

Third parties that benefit from GIS data should contribute to support of the source agency's GIS operations.

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
Group 1 Ownership				
Copyright	What can be copyrighted?	Facts can not be copyrighted. The arrangement of facts into unique structure and patterns can be copyrighted.	Assert ownership and control over agency-produced data	+ Standard procedure - Could be challenged in court, but unlikely
	Methods for copyright	Copyright notice		+ Standard procedure
Licensing	Reasons for Licensing	Control of users & uses	Protect liability or reputation	+ Standard procedure - Could be challenged in court, but unlikely
		Cost recovery	Recoup investment; or at least operating costs	+ Common procedure - Could be challenged in court
		Prevent "private profiteers"	Jealousy	- Discredited, yet existent
		Exclusive licenses to 3rd party data distributors	Nurture emerging new industry	+ May be necessary to attract any companies to perform service - Limits potential distribution - Enables excessive pricing
	How to handle use and distribution of data?	Non-exclusive licenses to 3rd party data distributors	Enable widest possible distribution of data through many channels	+ Provides many channels for distribution to many niches - Competition keeps price at true market level
		User acquires full use and distribution rights of data	Govt agency contracts for new data collection. Owner allows any and all use.	+ Full availability and use of data + User may do anything, including redistribute - this benefits source agency. - User may not distribute data responsibly - this could harm source agency.
		User acquires unlimited use of data but limited distribution	Govt agency acquires data for use, but does not own the data. Owner wants to control distribution	+ Some control over distribution protects source agency - Some control prevents some distribution.
		User acquires limited use of data and limited distribution	Govt agency acquires data for use, but does not own the data. Owner wants to control use and distribution	+ More control over use and distribution protects agency - Some control prevents more distribution.

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
	Access vs Copy?	User acquires limited use of data and no distribution	Govt agency acquires data for use, but does not own the data. Owner wants to control use and distribution severely	+ Most control over use and distribution protects agency - Most control prevents distribution.
		Allow copy of database to enable full analysis of database. Oversight requires reproduction of data analyses, which requires long-term access to full database.	Evaluate, oversee government decision making	+ Enables citizens to hold their government accountable - Precludes govt agency from exerting its ownership potential
		Access is possible through user-friendly interface for specific data.	Provide convenient access to data for common queries. (Provide information, not analysis)	+ Provides certain kinds of data easily to citizens - Does not provide all kinds of data citizens may legitimately request - Precludes ability of citizens to hold their government accountable
	Electronic or paper format?	Electronic format required by many state laws, in format govt agency uses the data	Evaluate, oversee government decision making	+ Enables citizens to hold their government accountable - Data format may be difficult to understand or manipulate; may require special software - Design of database may be considered proprietary by source agency
		Paper format may be most convenient for common data queries.	Provide convenient access to data for common queries. (Provide information, not analysis)	+ Easy to see data - Not possible to manipulate or cross-check the data
		Cost-sharing and data-sharing collectives may be exempt from "free" public access law.	Provide encouragement to join collective enterprise; prevent "free rider" problem.	+ Prevents free-riders - Makes it more expensive or difficult for non-members, especially single-use requesters. - Precludes full public oversight of government decision making
Questions	Exemptions	Some specific agencies have specific exemptions.	The political power of some agencies with state legislatures.	+ Benefit to government agency seen as overriding benefit to general public - Benefit to government agency seen as overriding benefit to general public
	What is derivative data?	Any minor or graphic change to original database	Retain full control over original data.	

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Adding significant new or corrected data to original database Any use of the original database	Allow value-added information to use original data. Allow original data to be seen as background only, but not manipulated.	
GROUP 2 Public Accessibility				
Equity of Data Access				
	Different policy for each Type of USER			Are these distinctions valid? viable? lawful? useful?
	Share with other agencies that provide data	Reciprocate data and services		+ Increases data distribution + Stimulates data sharing - Precludes those with no data to exchange
	Share with other government departments	Reciprocate services. Integrate services to the public throughout the organization		+ Increases data distribution + Improves governmental services to public
	Sell to other government departments	Make everyone pay except "us"		+ May provide a revenue stream to justify GIS operations - Alienates other departments and agencies from cooperating
	Share with other government agencies in jurisdiction	Reciprocate data and services Taxpayers of a jurisdiction should pay only once for data		+ Increases data distribution + Improves inter-agency cooperation and coordination
	Sell to other government agencies in jurisdiction	Taxpayers investment should be recouped.		+ May provide a revenue stream to justify GIS operations - Alienates other agencies from cooperating
	Create cost-sharing or data-sharing partners	Reinforce the benefits of joining a partnership		+ Benefits members of partnership - Reduces access for non-members
	Share with other local government agencies (not in jurisdiction)	Reciprocate services. Integrate services to the public		+ Improves inter-agency cooperation and coordination
	Sell to other local government agencies (not in jurisdiction)	Taxpayers investment should be recouped.		+ May provide a revenue stream to justify GIS operations - Alienates other agencies from cooperating

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Share with state or Federal agencies	Reciprocate services. Integrate services to the public. Promote NSDI	+ Improves inter-agency cooperation and coordination - Puts data in public domain; reduces ownership rights
		Share with private data resellers, integrators Sell to private data resellers, integrators	Increase outreach to public. Capture resale revenue. Control quality & destination of data	+ Increases data distribution + Increases economic activity + Provides a revenue stream to justify GIS operations - May limit access to data for people with little money - May reduce number of resellers and amount of access to data
		Share with private companies (not data resellers)	Stimulate economic activity	+ Increases economic activity + May create more useful 3rd party applications
		Sell to private companies (not data resellers)	Control quality & destination of data Make outsiders contribute to cost	+ May provide a revenue stream to justify GIS operations
		Educational and research institutions, newspapers Special interest organizations, public policy interest groups	Enable citizens to know what their government is doing Enable citizens to know what their government is doing	+ Enables public to oversee government activities + Enables public to oversee government activities
		Share with private citizens (in jurisdiction)	Enable citizens to know what their government is doing Taxpayers should benefit from their investment	+ Increases public access to data
		Share with private citizens (outside jurisdiction)	Encourage outside investment	+ Increases public access to data + May increase economic development
		Sell to private citizens (in jurisdiction)	Taxpayers should recoup their investment	+ May provide revenue stream - Creates resentment of taxpayers who have to pay for data twice
		Sell to private citizens (outside jurisdiction)	Taxpayers should recoup their investment	+ May provide revenue stream - May reduce data access and economic development
		Students	Enable students to learn what their government is doing.	+ Increases data access and use - May compromise privacy of individuals

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Other "Trusted Classes" of user	Share data only with users who have proved themselves to be minimal security or privacy risks.	<ul style="list-style-type: none"> + Maintains security and privacy - Difficult to define class equitably and specifically - Difficult to evaluate users fairly and consistently
<hr/>				
	Different policy by Type of DATA			
		Imagery	Privately created, ownership rights retained by company.	<ul style="list-style-type: none"> + Funds private companies and eventually expands the market - More expensive for citizens to access data.
		Centerlines	If privately created, ownership rights retained by company. If public creation, ownership rights at discretion of govt agency.	
		Parcels	Public creation, ownership rights at discretion of govt agency.	<ul style="list-style-type: none"> + If government shares data, more data users and uses - If government sells or restricts data, less data cooperation
		Other government-created data	Public creation, ownership rights at discretion of govt agency.	
	Assure "public" access under the law			
		Provide entire GIS database	"Public access" interpreted as ability to independently analyze data	<ul style="list-style-type: none"> + More users of data + Better scrutiny of government operations - Less agency control of data - More political activists asking questions
		Provide "access" to GIS data, but not copy of GIS database	"Public access" interpreted as ability to see data	<ul style="list-style-type: none"> + Fewer users of data + Less scrutiny of government operations - More agency control of data
Privacy	Limitations			
	Protect public officials	Restrict records of certain individuals	"Secret" data for government-only	<ul style="list-style-type: none"> + Protects certain people - May impede investigation of potential corruption
	Protect private individuals	Restrict some attributes or attribute links (keys)	"Confidential" need-to-know distribution	<ul style="list-style-type: none"> + Protects information sensitive to individuals - May impede investigation of potential corruption

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
Security		Provide limited view or query capabilities to the public: no download	Protect privacy from the arrangement or overlay of data which, taken individually, would not appear to violate privacy	+ Protects information sensitive to individuals - May impede investigation of potential corruption
	Limit access according to data content	Restrict records of certain individuals	Protect individuals, officials	+ Protects certain people - May impede investigation of potential corruption
		Restrict access to records of certain mapped features	Protect the jurisdiction	+ Impede potential terrorists - May prevent legitimate analysis
		Restrict access to records of certain mapped features	Protect the agency	+ Impede potential terrorists - May prevent legitimate analysis
	Limiting access according to Data User	Restrict access to records of specific habitats or species	Protect the environment	+ Protects the habitats from discovery - May prevent legitimate analysis
Liability		Government official only Selected citizens Anyone	Positive identification required	
	Sovereign immunity		Government is immune from liability for errors in normal course of business	
	Commercial warranty		Sale of a product (data) implies commercial warranty	
	Methods of protection	Disclaimers	Use of data implies agreement with disclaimer	
		Licensee signs away possible objections		
		Metadata	Informing user of data quality absolves any possible damage from mis-use of data	

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
GROUP 3 Funding Geodata Maintenance				
Methods of funding geodata maintenance and operations				
	Sell Data	Sell at market price that generates maximum revenue (price-volume maximum)	Generate a significant amount of revenue Recoup taxpayer investment Feeling proprietary value from a long development process Resistance to profiteer windfall from public investment	Compare: • Annual revenue • Cumulative revenue • Average revenue • Operating costs • Development costs • Update and added-capability costs Is the revenue worth limiting public access?
		Sell at price that recoups costs	Equitable cost to data users Defense against "free rider" when cost-sharing Recoup taxpayer investment	Compare: • Annual revenue • Cumulative revenue • Average revenue • Operating costs • Development costs • Update and added-capability costs Is the revenue worth limiting public access?
		Subscription price for cost-sharing group, higher price for others	Recoup taxpayer investment Defense against "free rider" when cost-sharing Desire for "control" of "our" data	+ Fair and equitable "pay for service" to partners + May raise significant funds relative to costs + Data agreements justify and require ongoing support of GIS operation - May impede single-use non-partners + Lower price reduces impediment to access
		Sell a relatively low price (above cost of reproduction)	Encourage wider number of users while still recouping revenue	+ Enough revenue is raised to look "significant" to Supervisors - Difficult to know what "appropriate" price is - Cost of accounting may eat up most of the revenues
		Provide at cost of reproduction	Equitable cost to taxpayers; they already paid	+ Public acceptability + Ease of implementation + Revenue from cost of reproduction may look "significant" to Supervisors

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
	Sell Services	Data at cost of reproduction; analysis and extraction services at higher price Contract for development and support services to departments, or other agencies	Provide adequate level of service / benefit Internal utility of GIS should pay for itself Funds come from departmental specific program moneys	+ Public acceptability + Raises more revenue + Data isn't "sold" to citizens + Data costs are part of departmental operations - May be difficult to fund enterprise-wide operation
	"Free" Data	Sell access to query/retrieval applications Provide data at cost of reproduction or less GIS Operations paid by Departmental users of applications	Fee for service application Price should not obstruct public access to data Wide distribution of data encourages 3rd party distribution Money from general fund Departmental users pay for: • support of applications and web-based services • basemap update • technical support • map production	+ Only actual users have to pay - Difficult to set fair price + Reduces impediment to data access + Encourages other agencies to share, use, and update data from source agency + Data consistency throughout jurisdiction + Builds a constituency of GIS supporters because GIS seen as an in-department tool.
Sources of funding geodata maintenance and operations				
TAXATION				
		Public pays taxes -> General Fund • GIS Support paid from General Fund	GIS is an enterprise activity funded by general fund	+ Lower price encourages multi-agency collaboration + Departments with funds set priority agency for GIS devt. - Enterprise-wide GIS devt. may be hampered
		Public pays taxes -> General Fund • Individual departments pay for services from GIS Support Dept.	GIS is embedded in normal departmental operations	+ Funding not seen as a GIS tax + Funding not from data sales - Some departments may not see value of GIS - Some departments may feel they are "paying too much" for GIS

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
ONGOING FEE		Public pays taxes -> Special Fund • GIS Support included in cost of special project	GIS is embedded in special project	+ Funding not seen as a GIS tax + Funding not from data sales - Funding may be short timeframe - Funding may be for selected data and apps, not enterprise GIS
		Public from another jurisdiction pay taxes -> Special Fund, earmarked for GIS development	Share costs with state or Federal agency programs Receive grant funding from state or Federal programs	+ Reduces burden to local taxpayers - Programs may be of limited scope or limited geographic area - Limited funds; limited recipients
		Subscription to Cost-Sharing Consortium	Users of GIS data pay for it.	+ Users benefit - Non-members or single-purpose users have reduced access
		Service Fee (for updates, translation, enhanced access)	Users of GIS data pay for it.	+ Users benefit + "Data" isn't being sold, but services are paid for
CONSULTING SERVICES		Support fee to internal departments	Users of GIS data pay for it.	+ Helps users make better use of data through application development and consulting - May be short term revenue
		Support fee to external agencies	Users of GIS data pay for it.	+ Helps users make better use of data through application development and consulting - May be short term revenue - May be seen as government competition with private sector.
UP-FRONT USER FEE		Data sales fee	Users of GIS data pay for it.	+ May generate revenue - May impede access to data for those without money - May discourage or impede economic development
		Data services fee	Users of GIS data pay for it.	+ May generate revenue + Makes data more accessible for those who buy the service + "Raw" data is freely accessible
BACK-END USER FEE				

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Resale royalty	Users of GIS data pay for it.	<ul style="list-style-type: none"> + Reduces initial impediment to data access - Requires intrusive auditing to enforce
		Fee for profit-making use	Users of GIS data pay for it. Government agency should benefit from profitable use of data	<ul style="list-style-type: none"> + Reduces initial impediment to data access - Requires intrusive auditing to enforce - This is a tax on profitability; discourages economic activity
	CAPTURE THE ADDED VALUE OF GEODATA USAGE			
		Allocate increased revenue from new economic development to GIS (existing taxes: property value, business license, sales tax)	Value of GIS data is in its use	<ul style="list-style-type: none"> + Captures value of use + No increase in taxes; just increase in collection efficiency + Easy to identify new sources of revenue
		Allocate new revenues from increased economic activity (using new taxes such as transfer fees)	Value of GIS data is in its use	<ul style="list-style-type: none"> + Captures value of use + Easy to identify new sources of revenue - Perceived increase in taxes, but only for selected people
		Allocate reduced cost of facility maintenance to GIS	Value of GIS data is in its use	<ul style="list-style-type: none"> + Captures value of use - Difficult to identify and track revenue stream of "unexpended expenses"
		Allocate reduced cost of capital improvements to GIS	Value of GIS data is in its use	<ul style="list-style-type: none"> + Captures value of use - Difficult to identify and track revenue stream of "unexpended expenses"
		Allocate increased efficiency of public safety emergency response to GIS	Value of GIS data is in its use	<ul style="list-style-type: none"> + Captures value of use - Difficult to identify and track revenue stream of "improved operations"
	CONTRIBUTION			
		Data sharing	Leverage data funds with outside resources	<ul style="list-style-type: none"> + Sharing data reduces costs for all participants - Non-data sharers may not participate
		Data in the public domain		<ul style="list-style-type: none"> + Data is cheap or free - Data may not meet requirements for accuracy or currency
	EXAMPLES OF GIS SUPPORT without data sales			
		Allocate revenues to general fund from increased economic activity or new economic development		

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Allocate some funding from programmatic sources for data collection and maintenance Sell consulting services for application development and training to internal departments. Allocate enterprise system support from general fund or from each department's share of general fund. Attach GIS support to specific taxes and fees, such as permits or property transaction fees Establish fee-for-service web applications Sell consulting services for special data requests to private sector Collect a bounty fee for unauthorized claims for HHS program funds Collect a bounty fee for under-taxed property tax reassessments Sell consulting services for application development and training to other agencies or private sector.		
GROUP 4 Data Distribution & Stewardship				
	Distribution Methods	Copy database on to hardcopy medium (e.g., CDs)	Provide all public data to the public, and Ensure positive identification of recipient	+ Fulfills public record laws + Reduces time required by staff to modify or extract data + Maintains security by identifying recipient
		Make database available for download via internet	Provide all public data to the public	+ Fulfills public record laws + May reduce time required by staff to modify or extract data - May threaten privacy or security without some limitations
		Make data "live" on internet with direct access using XML or Web Map Feature Services	Provide all public data to the public	+ Fulfills public record laws - May threaten privacy or security without some limitations
		Make database available for download via internet; only to data consortium partners	Force data users to become cost-sharing partners	+ Protects against "free-riders" - Partially fulfills public record laws - Requires staff time to administer membership - Impedes non-member public from access and use of data

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Make data viewable, but not copyable via internet	Prevent agency's data from being misrepresented Protect individual privacy Provide all public data to the public	<ul style="list-style-type: none"> + Allows public to view public data - but impedes independent analysis. + Allows public to view individual records - but does not enable viewing many or all records. + Prevents derivative products - but limits potential for growth of beneficial applications + May protect individual privacy from unsolicited advertising - but limits potential for growth of economic activity
		Provide data services via internet	Maintain control of agency's data. Maintain control of public access to public information, for reasons of privacy, security, or just CYA	<ul style="list-style-type: none"> + Simple, user-friendly operation - Limited public viewing of data - Limited flexibility for types of information, query, or analysis
		Distribute data in non-GIS, view-only formats, such as .pdf files, or CAD graphic-only files	Maintain control of agency's data. Maintain control over types of data analysis the public can conduct.	<ul style="list-style-type: none"> + Easy to use, easy to distribute + Prevents manipulation or misrepresentation of data - Violates public record act - Limits data analysis - Prevents data sharing and collaborative updating
		Distribute data through data resellers	Engage more agents in distributing agency data widely	<ul style="list-style-type: none"> + More resellers reach more market niches + More resellers compete to keep price low. + Resellers provide customer fulfillment and support service to relieve agency staff. - Resellers must control and license customer use and secondary distribution

CATEGORY	ISSUE	ALTERNATIVES	POLICY OBJECTIVE	EVALUATION
		Distribute data through value-added service providers	Maintain some control of agency's data Engage more agents in distributing agency data widely	+ More service providers reach more market niches + Useful data applications provided to public - Limited flexibility for types of information, query, or analysis
	Transparent Translation from Source to User	Standardized data structure	Enable wide variety of software users to read source data	+ Create common meaning and structure among agencies - Very difficult to assure compliance
		Machine readable embedded metadata	Enable specialized software users to read source data	+ Requires minimum compliance to data structure standards - Requires special software to read and translate source data
		Distribution in <i>defacto</i> standard formats	Enable users of common software to read source data	+ Widely understood data structure - May require translation to format not used internally
		Require data submissions to agency to be in GIS-compatible format	Use ongoing operations to build and update GIS data	+ Stimulates setting and compliance of standards - Difficult to enforce and explain to all users
	Metadata Maintenance Issues	Document database dictionary in standardized format	Adequate description of contents and format	
		Document metadata in standardized format	Accurate assessment of accuracy, completeness, projection, currency, data source and lineage	
		Upload metadata into NSDI-compliant catalog	Expands range of people who can know about agency's data; Contributes to robust and useful catalog	
		Maintain current, useful metadata	Metadata updates concurrent with data updates	
	Data Update Issues	Error detection by users Error correction by partners Additional data features from partners		

ACCESSIBILITY			
Policy objectives are provided for each Means of ACCESS and Type of USER			
Policy Objectives for Sharing Data			
<p><u>Sharing Data</u></p> <p>Data sharing is one of two primary means of conveyance between the governmental data steward and a second party. It may or may not involve a reciprocal agreement resulting in benefits to the parties involved. If present, such benefits can fluctuate during the term of the agreement. Benefits can be real, perceived, current or projected.</p>	<p><u>Government</u></p> <p>Sharing data with other units of government i.e. other divisions or departments within your jurisdiction.</p>	<ul style="list-style-type: none"> • Enter into reciprocal agreements for data sharing (agreement can be forward thinking therefore not requiring both parties to have data). • Adopt internal organization policy for data sharing, development and/or stewardship. • Geographical extent of jurisdiction will depend upon government unit. • Data provider sets limitations on redistribution of data. 	<ul style="list-style-type: none"> + Increases data distribution + Broader use of data increases its value. + Can result in exchange of value-added data. + Can help promote regional approach to data development and use. + Stimulates data sharing. + Can serve as basis for distribution of costs for data development and maintenance. + Can help local jurisdictions to get started with new technologies. + Improves governmental services to public. + Can legally lessen liability. + Improves inter-agency cooperation and coordination - Does not generate revenue. - May preclude those with no data to exchange.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
		Sharing data with other units of government i.e. other divisions or departments outside of your jurisdiction.	<ul style="list-style-type: none"> • Reciprocal agreements for data sharing (agreement can be forward thinking therefore not requiring both parties to have data). • Partnership approach between jurisdictions can be incorporated into system planning and marketing. • Data provider sets limitations on redistribution of data. • Require execution of DDSA. 	<ul style="list-style-type: none"> + Increases data distribution + Broader use of data increases its value. + Can result in exchange of value-added data. + Can help promote regional approach to data development and use. + Stimulates data sharing. + Can serve as basis for distribution of costs for data development and maintenance. + Improves governmental services to public. + Can legally lessen liability. + Improves inter-agency cooperation and coordination - Does not generate revenue. - May preclude those with no data to exchange.
		Nonprofits Sharing data on a project level basis only with nonprofits working within your jurisdiction.	<ul style="list-style-type: none"> • Relationship can vary depending upon capabilities of nonprofit. They can serve as a data user, developer, steward or as a service provider. • Sharing opportunity based upon use to which data will be put. • Partnerships between government and nonprofits can be incorporated into system planning and marketing. • Data provider sets limitations on redistribution of data. • Require certification to meet certain criteria defined by data steward i.e. "Trusted User". • Require execution of DDSA. 	<ul style="list-style-type: none"> + Increases data distribution + Cost-sharing opportunities for data development and maintenance. - Open to legal challenge for discriminating between who will get it and who will not. + Sharing data can help government agencies carry out business functions i.e. land preservation and community services. + Nonprofit partners can help in championing the cause.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
		Sharing data with nonprofits that may lie outside of your jurisdiction but whose efforts or mission affect your jurisdiction.	<ul style="list-style-type: none"> Relationship can vary depending upon capabilities of nonprofit. They can serve as a data user, developer, steward or as a service provider. Sharing opportunity based upon use to which data will be put. Partnerships between government and nonprofits can be incorporated into system planning and marketing. Data provider sets limitations on redistribution of data. Require certification to meet certain criteria defined by data steward i.e. "Trusted User". Require execution of DDSA. 	<ul style="list-style-type: none"> + Increases data distribution + Cost-sharing opportunities for data development and maintenance. + Lessens legal challenge for discriminating between who will get it and who will not.
		<u>Educational Institutions</u> Sharing data with primary and secondary schools to introduce GIS technology and raise general technology proficiency.	<ul style="list-style-type: none"> Sharing can be one way to support and encourage technology education and technology proficiency. Sharing can be part of student community service. Enable citizens to know what their government is doing. Data provider sets limitations on redistribution of data. 	<ul style="list-style-type: none"> + Partnering with schools is rarely a negative experience and can be very beneficial to public relations. + Helps to promote technology. + Heightens students awareness of their community by promoting environmental awareness and civic responsibility. + Students often develop data that can be beneficial to your jurisdiction. - Concern for individual privacy and organization security.
		Sharing data with higher education institutions i.e., colleges, universities & technical schools.	<ul style="list-style-type: none"> Sharing can be symbiotic in nature by assisting an institution with data and curriculum development in exchange for training government users. Data provider sets limitations on redistribution of data. Require execution of DDSA. 	<ul style="list-style-type: none"> + Partnering with schools is rarely a negative experience and can be very beneficial to public relations. + Helps to make training opportunities available to your work force. + Students often develop data that can be beneficial to your jurisdiction. + Helps to promote technology.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
		Sharing data with students	<ul style="list-style-type: none"> • Data provider sets limitations on redistribution of data. • Data sharing can be directly with the student or through an instructor. • Require execution of DDSA. 	+ Students often develop data that can be beneficial to your jurisdiction. - Sharing should be handled similarly as with general public.
		Private Sector Sharing data with private sector businesses within your jurisdiction.	<ul style="list-style-type: none"> • Share data with private concerns that can share back “value added” data i.e. the real estate industry. • Share data to encourage economic development. • Partner with private sector for data development and maintenance i.e. parcel and building data. • Data provider sets limitations on redistribution of data. • Require execution of DDSA. 	+ Business community can be used as an ally in getting technology implemented. +/- Private sector sharing can have long-term impacts upon the character, politics and economics of the community. + Cost-sharing opportunities. + Increases economic development and activity. + May create more useful 3rd party applications.
		Sharing data with private sector businesses outside your jurisdiction.	<ul style="list-style-type: none"> • Share data with private concerns that can share back “value added” data i.e. the real estate industry. • Partner with private sector for data development and maintenance i.e. parcel and building data. • Data provider sets limitations on redistribution of data. • 	+ Cost-sharing opportunities. + May create more useful 3rd party applications.
		Sharing data with the print and electronic broadcast medias of newspapers, magazines, periodicals, television, radio, internet and WWW.	<ul style="list-style-type: none"> • Data provider sets limitations on redistribution of data. • Require execution of DDSA. 	+ Improves governmental services to public. + Keeps the public informed. + Promotes open door policy to government. + Sharing data can help government agencies carry out business functions i.e. land preservation and community services. - Once it is out there it is difficult to control or monitor 2 nd and 3 rd party usage.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
		General Public Sharing data with members of the general public living within jurisdiction.	<ul style="list-style-type: none"> • Definition of public can vary depending upon mission of organization. • Vehicle through which data is provided to be determined by local policy i.e. web or CD. • Use of certification process to identify requestor. • Meet statutory responsibility. • Taxpayers of a jurisdiction should pay only once for data and are entitled to data for free. • Data provider sets limitations on redistribution of data. • Require execution of DDSA. 	<ul style="list-style-type: none"> + Promotes open door policy. + Delivery of digital data via the Web can be a powerful tool for providing local services i.e. road closures, health alerts and flood monitoring. + Increases public access to data. + Enables public to oversee government activities. + Promotes awareness, educates and advances the organization's agenda. - Open to legal challenge if access is restricted.
		Sharing data with members of the general public living outside of your jurisdiction.	<ul style="list-style-type: none"> • Definition of public can vary depending upon mission of organization. • Vehicle through which data is provided to be determined by local policy i.e. web or CD. • Use of certification process to identify requestor. • Meet statutory responsibility. • Data provider sets limitations on redistribution of data. • Require execution of DDSA. • State statute requires access to anyone. 	<ul style="list-style-type: none"> + Promotes open door policy. + Delivery of digital data via the Web can be a powerful tool for providing local services i.e. road closures, health alerts and flood monitoring. + Increases public access to data. + Enables public to oversee government activities. + Promotes awareness, educates and advances the organization's agenda. - Open to legal challenge if access is restricted.

CATEGORY	ISSUE	GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
Policy Objectives for Selling data				
	<u>Selling Data</u> Selling data is a one-way conveyance of data. It implies delivery of data in exchange for a monetary sum at or above the cost of reproduction. The amount of remuneration can vary depending upon the data provider, data recipient, data characteristics, acquisition agreement and statutory limitations on chargeable costs.	<u>Government</u> Selling data to other units of government i.e. other divisions or departments within your jurisdiction.	<ul style="list-style-type: none"> • Charge-back for access to data. • Subscription service to municipal units. • Cost-sharing as part of capital budgeting. • Develop data management plan based upon cost sharing or direct charge for data development and maintenance. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. 	<ul style="list-style-type: none"> + May provide a revenue stream to justify GIS operations. + Helps distribute the cost of data to those that use it. + As distribution of costs become wider it is more difficult to structure and manage. + How do you determine charges? - Alienates other government units from cooperating. - Uncertainty as to continued source of financing.
		Selling data to other units of government i.e. other divisions or departments outside your jurisdiction.	<ul style="list-style-type: none"> • Make everyone pay except those that directly shared in the cost. 	<ul style="list-style-type: none"> + Allows taxpayers to re-coop some costs of data development. + May provide a revenue stream to justify GIS operations - Alienates other government units from cooperating.
		<u>Nonprofits</u> Selling data to nonprofits, special interest groups and public policy interest groups working within your jurisdiction.	<ul style="list-style-type: none"> • Acknowledge corporate structure of nonprofits by setting minimal charge for data reproduction. • Develop data management plan based upon partnering for data development and maintenance. • Cost-share on a project-by-project basis. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. 	<ul style="list-style-type: none"> + Allows taxpayers to re-coop some costs of data development. - Reduces access by organizations that can least afford it.
		Selling data to nonprofits, special interest groups and public policy interest groups working outside your jurisdiction.	<ul style="list-style-type: none"> • Acknowledge corporate structure of nonprofits by setting minimal charge for data reproduction. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. • 	<ul style="list-style-type: none"> - Open to legal challenge if access is in conflict with state statute.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY				
CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
		<u>Educational Institutions & Media</u> Selling data to primary and secondary schools to introduce GIS technology and raise general technology proficiency.	<ul style="list-style-type: none"> • Provide data for cost of reproduction. • Apply same costing policy as with purchases by other user groups. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. 	<ul style="list-style-type: none"> + Allows taxpayers to re-coop some costs of data development. - Counter-productive in eliciting educational institutions to train staff. - Can be detrimental to advancing technology training in schools. - Puts data in public domain; reduces ownership rights.
		<u>Private Sector</u> Selling data to businesses that use it for profit generating purposes.	<ul style="list-style-type: none"> • Create subscription service for data and updates. • Have one-time sales structure. • Sell to private companies but not data resellers. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. 	<ul style="list-style-type: none"> + Allows taxpayers to re-coop some costs of data development. + Very little opposition to charging businesses for data that they use for business development. + Private sector is generally in the best position to afford paying for data. - Can be counter-productive to getting business organization support and acquiring value-added data back from business users. - Open to legal challenge if access is restricted.
		<u>General Public</u> Selling data to members of the general public.	<ul style="list-style-type: none"> • Define class of public that data will be sold to i.e. those living outside of the jurisdiction. • Have open definition of public class to cover any private individual seeking data for personal, non-business use. • Data provider disclaims itself from implied warranties, fitness, use and maintenance of data. 	<ul style="list-style-type: none"> + Increase outreach to public. + Enables public to oversee government activities. + Taxpayers should benefit from their investment - Open to legal challenge if access is restricted. - May limit access to data for people with little money.
Policy objectives are provided for Data Content based upon the types of information they contain and Data Types , focusing on NSDI Framework datasets and other datasets commonly developed by government units. The following underlying assumptions are being made: (1) The data was developed by or for the government unit and they have full rights to distribute, (2) If the data were created by a second party and obtained by the government unit via a form of contract or agreement, the terms and conditions of that contract or agreement take precedent as to access,(3) Although the spatial data remains the same, access to the attribute data is based upon the content and, therefore, access may be denied to protect personal privacy or security, and (4) There is statutory support that allows a jurisdiction to pursue the chosen policy objective.				

		GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY		
CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
	Data Content Providing access to data where permissions to or limitations on access is based upon its content either in the format, scale or attribution.	To abide by existing state and federal laws regulating confidentiality and security without applying local scrutiny over content.	<ul style="list-style-type: none">• Provide data with citation of applicable law.	<ul style="list-style-type: none">+ Liability is upon the higher jurisdiction regulating access.+ Furthers the establishment of a consistent statewide policy.- May fail to meet concerns of local data stewards and policy makers.
		To make data available but control scale and format.	<ul style="list-style-type: none">• Develop “public” datasets for general distribution and “private” datasets for internal use and distribution to specified users i.e. other government agencies and jurisdictions.	<ul style="list-style-type: none">+ May meet intent of the law without compromising local policy.- Limit on content and quality reduces value of data.
		To provide access to data but not copy of database.	<ul style="list-style-type: none">• Make geodata available for web viewing without download capability.• Construct spatial and attribute data as separate entities removing the capability of table joins.	<ul style="list-style-type: none">+ At least data can be viewed.- Limit on content reduces value of data.
		To control means of accessing data i.e. do not make data available for web download but allow for in-person acquisition.	<ul style="list-style-type: none">• Provide data samples and metadata describing data content and acquisition process i.e. completion of a disclaimer form.	<ul style="list-style-type: none">+ Physical interaction to acquire data is viewed as a deterrent to misuse of the data.- Inhibits acquisition of data by those at great distances or physically unable to travel.
		To make data available for web download.	<ul style="list-style-type: none">• Provide data in compressed formats therefore degrading quality and speeding up data transfer.	<ul style="list-style-type: none">+ Compressed formats allow for better transmission of large datasets over narrow bandwidths.

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY	ISSUE	POLICY OBJECTIVE	ALTERNATIVES	EVALUATION
	<u>Data Type</u> Access is based upon distinctions made between features that the dataset represents i.e. imagery (raster), parcels and structures (vector).	<u>Geodetic Control</u> To make available all monumentation points of geodetic network including complete Blue Book registration.	<ul style="list-style-type: none"> Require surveyors that prepare land development applications and property deeds to tie into network. 	<ul style="list-style-type: none"> + Facilitates use of network by local surveyors and engineers. + Ties land surveying into one network. - Raises cost of land development.
		<u>Orthoimagery</u> To provide access to historic and current imagery.	<ul style="list-style-type: none"> If privately created, access must accommodate limitations set by developer. Imagery can be distributed in full, compressed or degraded levels of quality. Availability and pricing structure can be based upon image quality. 	<ul style="list-style-type: none"> + High image quality facilitates accurate ground level observation of certain features and allows for planimetric data development. + Making available in compressed formats allows for less costly and quicker reproduction. - Degraded image quality does not facilitate accurate ground level observation of certain features and can inhibit planimetric data development. - Can be costly and time consuming to reproduce.
		<u>Cadastral (Parcels)</u> To make available parcel or tax map dataset.	<ul style="list-style-type: none"> Make available spatial data with full attribution. Make available spatial data with limited attribution. 	<ul style="list-style-type: none"> + This is the most valuable dataset that local jurisdictions develop and maintain. + Limited attribution can provide access to parcel information without privacy concerns. - There are personal privacy issues when making owner name and address available.
		<u>Government Boundaries</u> To make available administrative boundaries.	<ul style="list-style-type: none"> Basic framework dataset that should be openly available and consistent with local jurisdictions. 	
		<u>Hydrography</u> To make available linear, polygon and point data for streams, rivers, lakes, ponds, canals and other hydrographic features.	<ul style="list-style-type: none"> Make available spatial data with full attribution. Make available spatial data with limited attribution. 	

GROUP 2: ACCESSIBILITY, PRIVACY, SECURITY and LIABILITY

CATEGORY ISSUE POLICY OBJECTIVE ALTERNATIVES EVALUATION

		<u>Elevation</u> To make available topographic data.	<ul style="list-style-type: none"> • Make available spatial data with full attribution. •
		<u>Transportation (Road Centerlines)</u> To make available spatial data and all attribution data.	<ul style="list-style-type: none"> • Make available spatial data with full attribution. • Make available spatial data with limited attribution. • If privately created, access must accommodate limitations set by developer.
		<u>Land Use/Land Cover</u> To make available spatial data and all attribution data.	<ul style="list-style-type: none"> • Make available spatial data with full attribution. • Make available spatial data with limited attribution.
		<u>Critical Infrastructure</u> To make available spatial data and all attribution data.	<ul style="list-style-type: none"> • Security issues of providing full access to all must be considered. • Provide only to secure users such as Emergency Management and Law Enforcement.
		<u>Buildings</u> To make available spatial data and all attribution data.	<ul style="list-style-type: none"> • Make available spatial data with full attribution. • Make available spatial data with limited attribution. • Enter into data sharing with value-added users such as real estate brokers.
		<u>Natural Resources</u> To make available spatial data and all attribution data.	<ul style="list-style-type: none"> •

PRIVACY			
Policy objectives are provided by Class to be protected i.e., public officials, private individuals, convicted criminals.			
<u>Protected Class</u> Access to data is regulated through a class system where individuals are assigned to distinct groups based upon some identifying characteristic(s).	<u>Public Officials</u> Public officials warrant a higher level of privacy protection either due to their position or the type of information they interact with i.e. “confidential”.	<ul style="list-style-type: none">• Restrict records of certain individuals.•	<ul style="list-style-type: none">+ In order to perform routine daily responsibilities, public officials collect, use and transmit data that is confidential in nature.+ Protects certain people.- A blanket protection reduces public scrutiny and could lead to abuse of power and/or impede investigation.
	Public officials will be given no higher level of privacy based upon their position. Access to specific information used by them will be based upon specific data in question to determine confidential nature.	<ul style="list-style-type: none">• Restrict access by type data i.e. personal emails, rather than who it belongs to.•	
	<u>Private Individuals</u> To protect personal information about private individuals.	<ul style="list-style-type: none">• Restrict attributes or attribute links (keys).• “Confidential” need-to-know distribution.•	<ul style="list-style-type: none">+ Protects information sensitive to individuals.- May impede investigation of potential corruption.
	To protect privacy from the arrangement or overlay of data, which taken individually, would not appear to violate privacy.	<ul style="list-style-type: none">• Provide limited view or query capabilities to the public (no download)	<ul style="list-style-type: none">+ Protects information sensitive to individuals- May impede investigation of potential corruption.
	<u>Convicted Criminals</u> To abide by state statutes and executive orders.	<ul style="list-style-type: none">•	
	To provide information on criminals to the extent necessary to protect public welfare i.e. sex offenders.	<ul style="list-style-type: none">•	
		<ul style="list-style-type: none">•	

SECURITY				
Policy objectives for security are provided by data content and data user . There is an underlying assumption that the data contain some content characteristic that makes its distribution a security concern to the jurisdiction.				
Data Content Providing access to data where permissions to or limitations on access to is based upon its content either in the format, scale or attribution.	Individuals To limit full and unfettered access to the data to protect public officials and private individuals.	•	Restrict records of certain individuals.	
	Jurisdiction To limit full and unfettered access to the data to protect the jurisdiction.	•	Restrict access to records of certain mapped features.	
	Agency To limit full and unfettered access to the data to protect the agency.	•	Restrict access to records of certain mapped features.	
	Environment To limit full and unfettered access to the data to protect the environment.	•	Restrict access to records of specific habitats and species.	
Data User To determine user based access policy by applying set of evaluation criteria i.e. "trusted user".	Government Officials To control access on a need-to-know basis.	•		
	Selected Citizens To provide specific data for specific purposes.	•		
	Environmental Groups To provide a sufficient level of access to allow groups to function without creating security concern for whom the data was collected.	•		
	Law Enforcement To provide access on a need-to-know basis.	•		
	Health Organizations To provide access on a need-to-know basis.	•		

LIABILITY			
If a substantial harm were to result from a reliance on data provided by a public agency there is a very good chance that grounds for a liability claim would be discovered. However, assuming that a jurisdiction can be proactive in reducing liability, the following policy alternatives for liability are provided by the degree of protection desired.			
	<u>High Level of Protection</u> <ul style="list-style-type: none"> 		
	<u>Standard Level of Protection</u> To make immune from liability for errors in normal course of business.	<ul style="list-style-type: none"> Apply rules of sovereign immunity. 	+ If a state statute requires distribution of the data for reproduction costs only then liability seems to be reduced